

**REMARKS/ARGUMENTS**

Reconsideration in view of the following remarks is respectfully requested. No new matter is entered.

Claims 1-8, 18-90 stand canceled.

If the following arguments are found persuasive, applicant will re-enter the previously withdrawn terminal disclaimer, if required by the Examiner.

Claims 91-94 have been rejected under 35 U.S.C. §112. In claim 91, the Examiner questions how the flow channels are related, the showing in the drawings, and the noted third sheet in relation to the second sheet.

In response, it is noted that the claims and specification consistently use three terms, namely: a) *flow channel*; b) *flow-through channel*; c) *wall-flow channel*. The term *flow channel* is generic to two species or types of flow channels, namely a *flow-through channel* and a *wall-flow channel*. These terms are the terms used in the art. A *flow-through channel* is a channel through which exhaust flows without passing through a barrier or wall which traps particulate. A *wall-flow channel* is a channel through which exhaust flows and crosses a wall or barrier which traps particulate. The present claims and specification consistently use these terms in accordance with their meaning and use in the art. In the drawings, Fig. 11 shows the generic *flow channel* 208, and Fig. 13 shows the *flow-through channel* 210 and the *wall-flow channel* 212. Unlike the prior art, to be discussed infra, the present invention has both a *flow-through channel* and a *wall-flow channel* in the same structure, namely in the same *flow channel*, e.g. as shown in Fig. 12 with folded sheet 218 inserted into the channels in pleated sheet 216.

Responsive to the Examiner's question regarding the sheets, Fig. 12 shows first sheet 214, second sheet 216, and third sheet 218. Claim 91 requires that the second sheet 216 be pleated and forms with the first sheet 214 a plurality of axially extending *flow channels* 208, and that the second sheet 216 have a plurality of pleats 224 defined by wall segments 226, 228 extending in alternately manner between pleat tips 230, 232, 234, 236, Fig. 12, at axially extending bend lines

238, 240, 242, 244, and that the pleat tips 246, 248 on one side, e.g. bottom, of the second sheet 216 be in contiguous relation with the first sheet 214, and further that the third sheet 218 have a plurality of pleats 250 defined by wall segments 252, 254 extending in zig-zag manner between pleat tips 256, 258 at transversely extending bend lines 260, 262, Fig. 12, which extend transversely to the defined axis 222 and transversely to the first sheet 214, and that the first sheet 214 extend axially, 222, and extend laterally, 266, Fig. 12, relative to the transversely extending bend lines 260, 262 of the pleat tips 256, 258 of the third sheet 218.

Claims 9, 12, 15 have been rejected under 35 U.S.C. §102(b) over Nagai et al. U.S. Patent 5,863,311. The Examiner contends that Nagai shows a plurality of channels each having both: a) a flow-through channel catalytically reacting with exhaust; and b) a wall-flow channel trapping particulate. In response, and in respectful traverse, it is noted that Nagai et al. '311 has only wall-flow channels, not flow-through channels. All of Nagai et al.'s channels are wall-flow channels. There is no structure in Nagai et al. providing a flow channel having both a *flow-through channel* and a *wall-flow channel*. In contrast, claim 9 requires, referring to Figs. 11-13, that the plurality of flow channels (208) each have both: a) *a flow-through channel* (210); and b) *a wall-flow channel* (212). As seen in Fig. 12, the insertion of folded sheet 218 into pleated sheet 216 provides flow channels having both a *flow-through channel* (e.g. the portion of the flow channel downstream of the surfaces of sheet 218, e.g. as shown at 210), and a *wall-flow channel* (e.g. the portion of the channel upstream of the surfaces of sheet 218, e.g. at 212). Nagai et al. '311 does not show both of these types of flow channels in combination, i.e. both a *flow-through channel* and a *wall-flow channel*.

If deemed appropriate by the Examiner, applicant is willing to enter further clarifying language as to the above distinction, for example a requirement that the wall-flow channel be in an inserted position in the flow-through channel. The Examiner is kindly asked to contact applicant's undersigned attorney if any further clarification is deemed desirable.

Claim 9 further requires a plurality of sheets, at least one (218) of which is a filter media sheet, the sheets defining the plurality of flow channels (208), including *flow-through*

*channels* (210) catalytically reacting with the exhaust (204), and including *wall-flow channels* (212) in the same flow channels (208) as the *flow-through channels* (210). This is nowhere taught nor suggested in Nagai et al. '311.

Claim 9 further requires that the exhaust (204) flows axially (222) through the exhaust aftertreatment combined filter and catalytic converter (202), and that the *flow-through channels* (210) and the *wall-flow channels* (212) have axially overlapped sections (212a, 210a) in the flow channels (208). This is nowhere taught nor suggested in Nagai et al. '311.

Claims 10 and 11 depend from claim 9 and are believed allowable for the reasons noted above. Furthermore, these claims define subcombinations which are believed allowable.

Claim 12 requires a plurality of flow channels (208) each having both: a) a *flow-through channel* (210); and b) a *wall-flow channel* (212). Claim 12 requires that the *wall-flow channels* (212) be in the same such flow channels (208) as the *flow-through channels* (210). Claim 12 requires that the *flow-through channels* (210) and the *wall-flow channels* (212) have axially overlapped channel sections (212a, 210a) in the flow channels (208). This structural combination is nowhere shown nor suggested in Nagai et al. '311. Consideration and allowance of claim 12 is respectfully requested.

Claims 13 and 14 depend from claim 12 and are believed allowable for the reasons noted above. Furthermore, these claims define subcombinations which are believed allowable.

Claim 15 defines a combination requiring a plurality of flow channels (208) each having both: a) a *flow-through channel* (210); and b) a *wall-flow channel* (212), and is believed allowable for the reasons noted above.

Claims 16 and 17 depend from claim 15 and are believed allowable for the reasons noted above. Furthermore, these claims define subcombinations which are believed allowable.

Claim 91 depends from claim 9 and is believed allowable for the reasons noted above. Furthermore, with the Examiner's attention respectfully directed to Figs. 11 and 12, claim 91 requires that the exhaust (204) flow axially along an axial flow direction along an axis (222), and requires first, second and third sheets (214, 216, 218), and that the second sheet (216) be pleated

and form with the first sheet (214) a plurality of axially extending flow channels (208), and that the second sheet (216) have a plurality of pleats (224) defined by wall segments (226, 228) extending in alternating manner between pleat tips (230, 232, 234, 236, Fig. 12) at axially extending bend lines (238, 240, 242, 244), and that the pleat tips (246, 248) on one side (e.g. bottom) of the second sheet (216) be in contiguous relation with the first sheet (214), and further that the third sheet (218) have a plurality of pleats (250) defined by wall segments (252, 254) extending in zig-zag manner between pleat tips (256, 258) at transversely extending bend lines (260, 262, Fig. 12) which extend transversely to the defined axis (222) and transversely to the first sheet (214), and that the first sheet (214) extend axially (222) and extend laterally (266, Fig. 12) relative to the transversely extending bend lines (260, 262) of the pleat tips (256, 258) of the third sheet (218). Consideration and allowance of claim 91 is respectfully requested.

Claim 92 depends from claim 91 and is believed allowable for the reasons noted above. Furthermore, claim 92 requires that the defined axis (222) and the defined transverse extension (260, 262) of the pleat tips (256, 258) of the third sheet (218) and the defined lateral extension (266) of the first sheet (214) are all orthogonal relative to each other. This is not present nor suggested in Nagai et al. '311.

Claim 93 depends from claim 12 and is believed allowable for the reasons noted above. Furthermore, claim 93 requires that the exhaust (204) flow axially along an axial flow direction along an axis (222), and requires first, second and third sheets (214, 216, 218), and that the second sheet (216) be pleated and form with the first sheet (214) a plurality of axially extending flow channels (208), and that the second sheet (216) have a plurality of pleats (224) defined by wall segments (226, 228) extending in alternating manner between pleat tips (230, 232, 234, 236, Fig. 12) at axially extending bend lines (238, 240, 242, 244), and that the pleat tips (246, 248) on one side (e.g. bottom) of the second sheet (216) be in contiguous relation with the first sheet (214), and that the third sheet (218) have a plurality of pleats (250) defined by wall segments (252, 254) extending in zig-zag manner between pleat tips (256, 258) at transversely extending bend lines (260, 262, Fig. 12) which extend transversely to the defined axis (222) and transversely to the first

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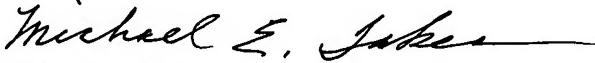
sheet (214), and that the first sheet (214) extend axially (222) and extend laterally (266, Fig. 12) relative to the transversely extending bend lines (260, 262) of the pleat tips (256, 258) of the third sheet (218). Consideration and allowance of claim 93 is respectfully requested.

Claim 94 depends from claim 93 and is believed allowable for the reasons noted above. Furthermore, claim 94 requires that the defined axis (222) and the defined transverse extension (260, 262) of the pleat tips (256, 258) of the third sheet (218) and the defined lateral extension (266) of the first sheet (214) are all orthogonal relative to each other. This is nowhere shown nor suggested in Nagai et al. '311. Consideration and allowance of claim 94 is respectfully requested.

It is believed that this application is in condition for allowance with claims 9-17, 91-94, and such action is earnestly solicited.

Respectfully submitted,

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